

## **CONTAINER LID WITH ANTI-SPILL SPOUT**

### **Background of the Invention**

[0001] The present invention is directed to a lid for a drinking cup and, in particular, to a drinking cup lid for a child's cup which permits the contents of the cup to be drunk with the lid in place and which resists spillage of the contents when the cup is tipped.

[0002] Use of spill-proof cups is known in the art. Various designs have been proposed for the purpose of preventing the inadvertent spillage of liquid which include sprint actuated valves incorporated into the lid, which opens under a vacuum pressure, an air-inlet valve which opens under a vacuum, and a screwable coupling between the lid and cup for equalizing the pressure within the cup, for example. These designs are often complex and provide limited results.

### **Summary of the Invention**

[0003] The present invention provides a drinking cup lid for use by toddlers or children which includes a lid with an invisible annular lip which seal around the rim of a cup, and an anti-spill spout which reduces the opportunity for liquid in the container to be spilled when tipped or jostled.

### **Brief Description of the Drawings**

[0004] Fig. 1 is a perspective view of the container lid with an anti-spill spout of the present invention.

[0005] Fig. 2 is a side elevational view of the container lid of Fig. 1 shown on a container.

[0006] Fig. 3 is a side elevational view of the container lid of Fig. 1.

- [0007] Fig. 4 is a front elevational view of the container lid.
- [0008] Fig. 5 is an enlarged top plan view of the container lid of Fig. 1.
- [0009] Fig. 6 is an enlarged partial sectional view generally of the area in circle 6 shown in Fig. 3.
- [0010] Fig. 7 is an enlarged partial sectional view generally of the area in circle 7 shown in Fig. 2.
- [0011] Fig. 8 is a sectional side view of the container lid of Fig. 3 shown nested with another container lid.
- [0012] Fig. 9 is a perspective view of the lid of Fig. 1 with an alternate aperture embodiment in the spout.

Detailed Description of the Preferred Embodiment

[0013] Referring to Figs. 1-5, a container lid with an anti-spill spout of the present invention is generally indicated by reference numeral 10. Container lid 10 includes a top 12, a rim 14, and a spout 16.

[0014] Top 12 is generally dome-shaped with a periphery that generally conforms to the shape of the open tope of a container 13. Rim 14 includes a beveled lip 18, and a generally upright side wall 20.

[0015] Spout 16 extends upwardly from top 12 proximal rim 14. Spout 16 includes front 22 and rear 24 surfaces and curved side surfaces 26 and 28. A top surface 30 includes a slot 32 which allows liquid to pass from the container 34 through the spout 16. Spout 16 is generally rectangular in shape with rounded corners at the top surface 30 and transitions outwardly into the curvature of the lid top at its base.

[0016] Referring to Figs. 6 and 7, slot 32 may have a width of approximately 0.02 inches to 0.06 inches and a length of approximately 0.30 inches to 0.7 inches. The walls of slot 32 may be generally perpendicular to the top surface 30 or may be beveled or angled inwardly where the external area of slot 32 is greater than the internal area.

[0017] The shape and area of slot 32 prevents liquid in contact with the slot from passing through the slot under normal conditions when the container is jostled or tipped over. The surface tension of a liquid in contact with the slot 32 may be greater than or equal to atmospheric pressure so that the liquid will not escape from the container even when the container is inverted. When a vacuum is applied to the spout 16 such as when a child is sucking on the spout to drink the liquid contents of the container, the surface tension of the liquid is overcome and the liquid passes through the slot into the child's mouth.

[0018] The inside diameter of rim 14 includes an annular ridge 36 which seats under the rim 34 of a cup 13 to seal the lid 10 to the cup. The lid 10 is pressed on the top of a cup until the ridge 36 on the inner diameter of rim 14 passes over the rim 34 of the cup 13 and locks or snaps into place.

[0019] Referring to Fig. 8, many lids 10 may be nested and stacked in a retail environment or for packaging and shipping. The ability to nest lids 10 helps conserve space when shipping and dispensing the lids and protects the lids 10 from damage. The lids 10 may be made of injection molded or blow-molded plastic in a single piece.

[0020] Referring to Fig. 9, an alternate embodiment of a lid with an anti-spill spout is generally indicated by reference numeral 110. Container lid 110 includes a plurality of apertures 112 in the spout which prevent a liquid in an attached container from spilling when tipped or jostled, and allow liquid to be drawn from the spout through the apertures when under a vacuum.

[0021] It is to be understood that while certain embodiments of the invention have been shown and described, the invention is not limited thereto and encompasses various other embodiments and aspects.